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Does providing personalized feedback in psychology teaching and learning differentiates students' academic performance?

Romeo Zeno Cretu[a], Valeria Negovan[b*]

[a,b] *University of Bucharest, Psychology Department, Bucharest, 050663,Romania*

Abstract

The study explored the differences among students' academic performances in two distinct conditions: receiving and not receiving personalized feedback in academic tasks that they had to fulfil. Participants in the study were 273 undergraduate psychology students (2nd year), aged 20 to 42 years (M = 21.40, SD = 2.66), 35 males and 238 females, at the Faculty of Psychology in Bucharest, Romania. The results advocate for more formative assessment, including feedback, in teaching and learning psychology in higher education.

Keywords: feedback in teaching and learning psychology; personalized external feedback; self-generated feedback.

1. Introduction

The research problem of this study is to describe and explain the relationship between the students' results in a written examination and the personalized feedback that they explicitly received in a precisely defined moment during their preparation for the exam.

Although the problem is not completely new in nature, in the Romanian specialized literature there is very little empirical research, to our knowledge, that has directly examined this issue in the field of Educational and Learning psychology in higher education. Thus, new empirical research is needed in this area, particularly in the current context of higher education.

Two major changes in psychology teaching in higher education support bringing into question the role and need for feedback, namely: a tendency to increase the number of students in a course which greatly reduces the opportunities to provide personalized feedback for each student and unprecedented

* Corresponding author. Tel.: +40.31.425.34.45; fax:+.40.31.425.34.46.
E-mail address: negovan.val@gmail.com

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diversification of sources of information to which students have access (which exposes them to the risk of taking non-selectively and sometimes unquestioningly information that can function as implicit feedback and can reinforce an inadequate response).

The problem of providing feedback to a growing number of students is old and has not found appropriate solutions yet. For example, Jacobs and Chase (1992) wrote "Unfortunately, too little feedback characterizes university teaching, especially in large classes. Often students are given only the total score and this is not sufficient" (p. 7). Yes feedback is considered as a key element of quality teaching (Black and William, 1998; Ramsden, 2003) and often analysed in relation to qualitative assessment (Ligh and Cox, 2001).

Feedback was defined as "any of the numerous procedures that are used to tell a learner if an instructional response is right or wrong" (Kulhavy, 1977, p. 211) or as any "information about how successfully something has been or is being done" (Sadler, 2008, p. 4). The specialized literature approaches a series of issued related to feedback, from the features of a good feedback to the relationship between feedback and the time students spend on task (Gibbs and Simpson, 2004, Gibbs, 2006).

Sadler (2008) describes three necessary conditions for students to benefit from feedback in academic tasks: informing the student of what is expected of him (specifying the standards for him), information on the gap between his current performance and standards, information on ways to reduce such gap.

The authors believe that features of good practices in feedback technique are based on clarifying the standards, providing the student with accurate information about how much he learned, offering opportunities to reduce the difference between standards and performance, facilitating student reflection on the quality of his learning (Rust, et al., 2003). Other issue considered in conjunction with feedback is how to communicate it (e.g. audio feedback, computer feedback, "posting placards where students obtain feedback by comparing their activity with that of their colleagues") (Hounsel & McCune, 2003).

One of the most significant issues related to feedback is identifying ways through which the external feedback provided by the teacher is internalized by the student and becomes self-generated feedback while having "a significant influence on subsequent learning" (Nicol & Boyle, 2003). The literature specifies that there is not enough empirical evidence for saying that feedback provided in one or more situations of learning is internalized to such an extent that it ensures superior results in subsequent exams and that its efficiency also depends on the student's learning experience and a series of individual factors such as his learning style (Robson, 2000).

The main purpose of the present study is to explore the differences among students' academic performances in two distinct conditions: receiving and not receiving personalized feedback on academic tasks that they had to fulfill.

The research questions were: Are there differences in terms of grades in an Educational psychology exam between students who used the opportunity to ask for personalized feedback and those who did not? Are there differences in terms of grades in the Learning psychology exam between students who received personalized feedback for a prior exam and those who did not?

2. Method

2.1. Participants and instruments

Participants in the study were 273 undergraduate psychology students (2nd year) enrolled in two courses (Educational psychology - first semester and Learning psychology – second semester), aged 20 to 42 years (M = 21.40, SD = 2.66), 35 males and 238 females, at Faculty of Psychology and Educational Sciences (FPES), in Bucharest, Romania.

Data collection instruments were the protocols of records of students' condition (asking for feedback – yes/no) and their grades obtained in the written examinations.

2.2. Procedure and data analysis

A quasi-experiment was made during the academic years 2010 – 2011 at FPES, with 2nd year undergraduate psychology students enrolled in the two courses, already mentioned.

In the first stage an academic task was set by the teacher. This task was to write an essay about his/her own opinion related to one of the Educational psychology specific topics (e.g. Describe and argue personal position regarding the dispute about relationship dependency - autonomy in school learning or about the nature – nurture role in human development). This essay had a very strict structure, with 5 issues to be mentioned: (1) Presenting the specialists' opinions on topic on debate; (2) Presenting the personal opinion on topic on debate – related to the mentioned specialists'' beliefs (agreement and/ or disagreement); (3) Presenting minimum two reasons for agreement and/ or disagreement; (4) Describing a concrete case (from personal experience) that can sustain the personal opinion; (5) Presenting some expected effects of personal opinion/ belief on professional behavior (as future teacher or psychologist). One point was given for treating each issue, so that the student could obtain a total of 5 points for the essay.

The students were informed that a similar essay would be one of the subjects of the exam due at the end of the Educational psychology course. The students were also informed that they could ask for feedback for their essays by sending them (via e-mail) to the teacher (the second author of this study), 2 weeks before the end of course. The feedback was provided by confirming the fact that the student will receive the total percentage for the manner in which the issue was approached (all the 5 issues were approached). In case that some issues were inadequately approached, written comments and explanations were provided. The final written exam contained a subject that required a task similar to those that the student wrote for the feedback.

In the 2nd stage (the next semester, the Learning psychology course), the students were informed that they would receive in the final examination a task similar to those they received in the Educational Psychology course (but on a specific issue of Learning psychology). This time they were not allowed to ask for a personalized feedback but they were informed that the structure and the standards of the manner of discussing the subject are similar to the previous task in the Educational psychology course.

At seminars (activities common to both courses - Educational psychology and Learning psychology) the students had to complete two different tasks that aimed at preparing them to think analytically according to the type of subjects they received in the final examination. The feedback received in the seminar activities was both peer-feedback and tutor's feedback.

In order to answer our questions about the relationship and the differences in students' grades depending on whether they asked for feedback or not, the Chi square Test (χ^2) was used to determine whether the relationship noticed in a contingency table is statistically significant, the Spearman bivariate correlation procedure, and the Mann-Whitney Test for the significance of the differences between students who asked for feedback and those who did not in terms of their grades in the written examinations were used.

3. Results

Sixty-eight (24.9%) out of the total sample of 273 students used the opportunity to receive personalized feedback on meeting standards of performing the similar work that they will have to treat in the written exam. Out of the 68 students who asked for feedback, 28 received a score that placed them in

the category "low" level (between 1 and 4 points out of 5), 9 students were placed in the category "average level" (4.5 points) and 31 students were placed in the category "high level" (5 points). The difference is statistically significant [$\chi 2(2) = 136$, $p < .001$, Cramer's V= $p < .001$]. Out of the same 68 students who asked for feedback, 11 obtained a low score in the written exam in Educational Psychology, 25 obtained an average score and 32 obtained a high score. The difference is statistically significant [$\chi 2 (2 = 68) = 13.14$, $p < .001$, Cramer's V= $p < .001$]. Finally, for the same 68 students group who asked for feedback, 11 obtained a low score in the written exam in Learning Psychology, 25 obtained an average score and 30 obtained a high score. The difference is statistically significant [$\chi 2 (2) = 15.79$, $p < .001$, Cramer's V= $p < .001$]. Table 1 shows the central tendencies of grades and scores obtained in the written examination and the draft of their essay sent for a feedback.

Table 1. Descriptive statistics for scores obtained in the written examsScale

	Feedback	N	Min. statistic	Max. statistic	Mean	SD	Skewness	Kurtosis
Scores for Written exam in Educational psychology (1st semester)	No	176	2	7	5.59	1.45	-0.92	-0.18
	Yes	67	2.75	7	6.34	0.96	-1.89	3.29
Scores for Written Exam in Learning psychology (2nd semester)	No	159	1.25	7	4.82	1.79	-0.20	-1.32
	Yes	66	2.25	7	5.73	1.25	0.80	-0.37
Scores for Draft for feedback in Educational psychology	No	225	-	-	-	-	-	-
	Yes	68	1	5	4.33	0.83	- 1.59	-3.05

For Educational psychology, a weak correlation was discovered between the grades from seminars and the final exam ($r = .34$, $p<.001$). A moderate correlation was registered between the grades at the seminars and final exam in Learning psychology ($r = .58$, $p<.001$). Scores for the written exam in Educational psychology (1st semester after feedback) correlated with the scores in the written exam in Learning psychology (2nd semester without feedback) ($r = 0.54$, $p<0.001$). These coefficients indicate a moderate relationship among students' academic performance at the two disciplines.

By comparing the grades obtained in the written examinations, we noticed that those students who used the opportunity to ask for a personalized feedback obtained higher grades, both in the Educational psychology exams (Mean ranks = 148.98), but also in Learning psychology exams (Mean ranks = 135.05) than the students who did not asked for feedback (Mean ranks Educational psychology = 111.73 and Mean ranks Learning psychology = 103.85). The mean rank for the students who received personalized feedback in the first semester was higher than for those who did not receive ($Z=-3.97$, $p<.001$). It was discovered that the pattern of the mean rank differences was preserved for the same students, a semester later, in Learning psychology ($Z = -3.12$, $p<.05$). It could be taken as a proof that the personalized treatment received by the students persisted over the time and context.

4. Discussion and conclusions

We found that grades from Educational psychology seminars' are moderately correlated with the grades from the final exam in the first semester. The same was found in case of the seminar and the final exam in Learning psychology. Moreover, the grades from Educational and Learning psychology were also moderately correlated. The mean rank for the students who received personalized feedback in the

first semester was higher than for those who did not receive personalized feedback. It was surprising that the pattern of mean rank differences was preserved for the same students, a semester later, in Learning psychology while these results support the assumptions in the specialised literature (Gibbs and Simpson, 2004; Robson, 2000).

The results of this study should be considered in light of the following limitations: data refers to a limited field of Educational and Learning psychology and does not allow relating to personal factors that could have influenced the differences identified. Research on differences noticed would be also welcome in other areas of teaching and learning psychology in higher education.

An observation is pertinent and may represent a generous direction for continuing this research. It is the small number of students (68 out of 273, representing 24.9%) who used the opportunity to receive personalized feedback. We recommend investigating the factors that encouraged this situation, particularly the personal factors that influence students' capacity to seek feedback, a capacity that is the more significant as the possibility to offer personalized feedback still remains a big challenge especially for the teachers who are working with large classes.

In line with the main purpose of the present study we explored the differences among students' academic performances in two distinct conditions: receiving and not receiving personalized feedback at academic tasks that they had to fulfil. This purpose was achieved to a large extent and the results of the research provided useful data and information regarding the impact of feedback on students' tests performances.

The research's results contribute to the better understanding of approached relationships and advocate for more formative assessment, including feedback, in teaching and learning psychology in higher education. As practical implications of these results, we suggest students' education in terms of an active search for personalized and specialized feedback.

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